



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/574,729

04/05/2006

Peter E. Pierini

63557B US

1899

109 7590 03/27/2008

The Dow Chemical Company
Intellectual Property Section
P.O. Box 1967
Midland, MI 48641-1967

EXAMINER

LEE, RIP A

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

03/27/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/574,729	Applicant(s) PIERINI ET AL.	
	Examiner RIP A. LEE	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-41 is/are rejected.
- 7) ☒ Claim(s) 1-3, 8-10, 18, 22, 24 and 35 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>10-02-06/01-25-07/02-12-07/07-05-07</u> . | 6) <input type="checkbox"/> Other: ____. |

Art Unit: 1796

DETAILED ACTION

Claim Objections

1. Claim 1 is objected to because of the following informalities: In line 5 of the claim, please replace “127□C” with “127 °C.” Appropriate corrections are required.
2. Claim 2 is objected to because of the following informalities: As indicated in the independent claim, it is the homopolymer polypropylene that exhibits the melt flow rate of 6.0 to 20, rather than the polypropylene (homopolymer polypropylene and nucleator/clarifier). Please insert “homopolymer” prior to the second “polypropylene” in line 1 of the claim. Appropriate correction is required.
3. Claim 3 is objected to because of the following informalities: Please insert “homopolymer” prior to the second “polypropylene” in line 1 of the claim since it is the homopolymer polypropylene that exhibits the recited properties, rather than the polypropylene. Appropriate correction is required.
4. Claims 8 and 9 are objected to because of the following informalities: Please insert “homopolymer” prior to the second “polypropylene” in line 1 of the claim since it is the homopolymer polypropylene that exhibits the claimed crystallinity values. Appropriate corrections are required.
5. Claim 10 is objected to because of the following informalities: Please replace “lays” with “lies.” Appropriate correction is required.
6. Claim 18 is objected to because of the following informalities: Please insert “copolymer” after the second “polypropylene” in line 1 of the claim. Appropriate correction is required.

Art Unit: 1796

7. Claim 22 is objected to because of the following informalities: Please replace “lays” with “lies.” Appropriate correction is required.
8. Claim 24 is objected to because of the following informalities: The claim appears to depend from claim 23 since there is no antecedent basis for the term “the sorbitol” in claim 17. Appropriate correction is required.
9. Claim 35 is objected to because of the following informalities: Please write the full names for all abbreviated polymer names. Abbreviations may accompany the name in parentheses, *i.e.*, ethylene vinyl alcohol (EVOH). Appropriate corrections are required.
10. Claim 35 is objected to because of the following informalities: The term “Saran” is a trade name which is used to identify a source of goods, and not the goods themselves. Thus, a trade name does not identify or describe the goods associated with the trade name. See MPEP § 2173.05(u). Please replace “Saran” with the chemical name of the polymer from which it is made. Appropriate correction is required.
11. Claim 35 is objected to because of the following informalities: Please replace “malaic” with “maleic.”

Art Unit: 1796

Claim Rejections - 35 USC § 112

12. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

13. Claims 12-15 and 23-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not clear what chemical species is claimed by the term “chemical derivatives.” The chemical identity of the derivative is not described in the claim, and the specification does not provide guidance (chemical formulae or structures) or working examples of such derivatives, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

14. Claim 17 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim is drawn to a copolymer containing less than 2 wt % of units derived from ethylene. The lower bound of the range is not recited in the claim, and since “less than 2 wt %” includes zero, the claim is rendered vague and indefinite since the minimum ethylene content which defines the claimed polymer is unknown.

15. Claim 36 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim recites a process used for making film, however, the claim is indefinite since it does not recite any active, positive steps delimiting how this use is actually practiced.

Art Unit: 1796

Claim Rejections - 35 USC § 102

16. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

18. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Art Unit: 1796

19. Claims 1-16 and 37-41 are rejected 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Yamada *et al.* (U.S. 6,162,887).

Yamada *et al.* teaches a highly crystalline polypropylene resin having an isotactic pentad index of 99.3 % or more, a melt flow rate of at least 0.1 g/10 min, and a molecular weight distribution M_w/M_n of at least 2 (col. 7, lines 48-54; examples show polymer having melt flow greater than the lower bound of 5 g/10 min recited in the instant claims). The reference does not indicate the isotactic pentad/triad ratio, however, since the value of $[mm]$ for a given polymer is necessarily greater than that of $[mmmm]$, it follows the isotactic pentad/triad ratio meets the limits set forth in the instant claims. Melting points of polymer are greater than 160 °C, and the degree of crystallinity is reported at about 55 %, 54 %, and 60 % for examples 1, 3, and 4, respectively. The crystallinity of a polymer is a property that depends, in part, to the method by which is measured, and it is known that crystallization rate, *inter alia*, affects the degree of crystallinity. The polymer of example 1, having a different thermal history, exhibits a crystallinity of 69.5 % compared with the value of 55 % tabulated previously (col. 18, line 24). Thus, one of ordinary skill in the art reasonably infers that other polymers of the invention may exhibit a higher degree of crystallinity depending on the method of crystallization. Since the PTO can not perform experiments, the burden is shifted to the Applicants to establish an unobviousness difference. *In re Fitzgerald*, 619 F.2d. 67, 205 USPQ 594 (CCPA 1980). See MPEP § 2112-2112.02. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). And while the xylenes soluble content of the polymer has not been measured, in view of the fact that the polymer is highly stereoregular and exhibits high crystallinity, corresponding to low content of atactic and amorphous polymer fraction, a reasonable basis exists to believe that inventive polymers exhibit the claimed xylenes soluble content. Again, the burden of proof rests with Applicant to establish any unobviousness differences.

Polymer compositions contain nucleating agents in the range of 0.05-0.4 parts by weight (col. 13, line 18) of sorbitol compounds and sodium 2,2'-methylenebis(4,6-di-*t*-butylphenyl)phosphate are exemplary (col. 12, lines 40-43).

Art Unit: 1796

Inventive polymer compositions of Yamada *et al.* can be molded into a desired shape using a film forming method (col. 13, line 41), and one would conclude that these compositions, which have been shown to be substantially the same as that recited in the instant claims, would exhibit the property of being capable of being manufactured into a blown film at the claimed rate measured in units of lb/hr-in. It follows that a one mil thick film would also exhibit the claimed film properties (clarity, haze, 1 % secant modulus, onset of crystallization, crystallization half-life, and magnitude of onset slope). Since the PTO does not have the means to prepare blown film and perform experiments, the burden is shifted to the Applicants to establish any unobviousness differences with respect to these conditional limitations.

20. Claims 27-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada *et al.* in view of Herrington (U.S. 3,959,425) and Ogale (U.S. 5,538,804).

The discussion of the disclosures of the prior art from the previous paragraph of this office action is incorporated here by reference. Yamada *et al.* contemplates use of polypropylene compositions for manufacture of film, but the inventors do not disclose blown film. However, at the time the instant invention was made, use of polypropylene and other polyolefin to make blown film was well-known in the art. Ogale teaches that polypropylene resins having good melt flow properties are well-suited for making one mil thick air quenched blown film (col. 9, line 10). The combination of references would have suggested to one having ordinary skill in the art that polypropylene compositions of Yamada *et al.*, which have good flow properties, are good starting materials for making blown film. Thus, it would have been obvious to one having ordinary skill in the art to make blown film from polypropylenes of Yamada *et al.*, and based on the excellent rheological and physical properties of these prior art polypropylenes, one having ordinary skill in the art would have expected to make dimensionally stable, strong and clear films with a high degree of success. The combination is obvious because Yamada *et al.* contemplates manufacture of film, and Ogale furnishes the otherwise missing element of the type of film.

One of ordinary skill in the art would have found it obvious to carry out a blown film process using the parameters set forth in Herrington, which teaches that blown film may be prepared at a reasonable rate of 2-50 lb/hr-in at a blow up ratio of about 1.5 to 5 (claim 2). Ogale

Art Unit: 1796

also discloses preparation of polypropylene at a blow up ratio of 2.5 to 4.1 (col. 9, line 27). Preparation of multilayer film is also obvious over the combination of prior art. Ogale discloses various types of film are prepared by lamination or coextrusion techniques. Useful film materials include homopolymers and copolymers of ethylene or propylene, ethylene vinyl alcohol copolymers, and ethylene vinyl acetate copolymers (col. 13, lines 30-42). It would have been obvious to one having ordinary skill in the art to make a multilayered film in order to improve the mechanical properties of the product.

21. Claims 1-16 and 37-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gauthier *et al.* (U.S. 6,855,783) in view of Yamada *et al.*

Gauthier *et al.* discloses a series of polypropylene polymer having a molecular weight distribution of less than 6, a melt flow rate greater than 5 g/10 min, less than 2 % xylenes solubles, and an isotactic pentad greater than 95 % (Table III and VI). The reference does not indicate the isotactic pentad/triad ratio, however, since the value of $[mm]$ for a given polymer is necessarily greater than that of $[mmmm]$, one of ordinary skill in the art would reasonably believe that the isotactic pentad/triad ratio meets the limits set forth in the instant claims. The crystallinity of a polymer is a property that depends, in part, to the method by which is measured, and it is known that crystallization rate, *inter alia*, affects the degree of crystallinity (see Yamada *et al.*, col. 18, line 24). In view of the fact that melting points of polymers in Gauthier *et al.* lie in the range of 158 °C to 160 °C, one of ordinary skill in the art reasonably infers that polymers of the invention exhibit a higher degree of crystallinity depending on the method of crystallization. Since the PTO can not perform experiments, the burden is shifted to the Applicants to establish an unobviousness difference. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Gauthier *et al.* does not teach use of nucleating agent to induce crystallization of polypropylene resin, however, this is well-known and conventional practice in the art. Indeed, Yamada *et al.* recommends incorporation of nucleating agent in the range of 0.05-0.4 parts by weight (col. 13, line 18), of sorbitol compounds and sodium 2,2'-methylenebis(4,6-di-*t*-butylphenyl)phosphate are exemplary (col. 12, lines 40-43), during manufacture of molded

Art Unit: 1796

articles containing polypropylene resin. Therefore, it would have been obvious to one having ordinary skill in the art to use the amount of nucleating agent, taught in Yamada *et al.*, in order to enhance crystallization of molded articles prepared with polypropylene resins of Gauthier *et al.* Since this is well-established practice in the art, one of ordinary skill in the art would have expected such the combination to work with a high degree of success.

Clearly the polymer compositions of Gauthier *et al.* can be molded into a desired shape, and one would conclude that these compositions, which have been shown to be substantially the same as that recited in the instant claims, would exhibit the property of being capable of being manufactured into a blown film at the claimed rate measured in units of lb/hr-in. It follows that a one mil thick film would also exhibit the claimed film properties (clarity, haze, 1 % secant modulus, onset of crystallization, crystallization half-life, and magnitude of onset slope). Since the PTO does not have the means to prepare blown film and perform experiments, the burden is shifted to the Applicants to establish any unobviousness differences with respect to these conditional limitations.

22. Claims 27-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gauthier *et al.* in view of Yamada *et al.*, as applied to claims 1-16 and 37-41 above, and further in view of Herrington and Ogale.

Gauthier *et al.* does not specify a particular end use for inventive polypropylene resins. At the time the instant invention was made, use of polypropylene and other polyolefin to make blown film was well-known in the art. Ogale teaches that polypropylene resins having good melt flow properties are well-suited for making one mil thick air quenched blown film (col. 9, line 10). The combination of references would have suggested to one having ordinary skill in the art that polypropylene compositions of Gauthier *et al.*, which have good flow properties, are excellent starting materials for making blown film. Thus, it would have been obvious to one having ordinary skill in the art to make blown film from polypropylenes of Gauthier *et al.*, and based on the excellent rheological and physical properties of these prior art polypropylenes, one having ordinary skill in the art would have expected to make dimensionally stable, strong and clear films with a high degree of success. One of ordinary skill in the art would have found it

Art Unit: 1796

obvious to carry out a blown film process using the parameters set forth in Herrington, which teaches that blown film may be prepared at a reasonable rate of 2-50 lb/hr-in at a blow up ratio of about 1.5 to 5 (claim 2). Ogale also discloses preparation of polypropylene at a blow up ratio of 2.5 to 4.1 (col. 9, line 27). Preparation of multilayer film is also obvious over the combination of prior art. Ogale discloses various types of film are prepared by lamination or coextrusion techniques. Useful film materials include homopolymers and copolymers of ethylene or propylene, ethylene vinyl alcohol copolymers, and ethylene vinyl acetate copolymers (col. 13, lines 30-42). It would have been obvious to one having ordinary skill in the art to make a multilayered film in order to improve the mechanical properties of the product.

23. Claims 1-26 and 37-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grasmeder *et al.* (WO 99/11678; equivalent U.S. 6,537,478 relied upon for indexing) in view of Yamada *et al.*

The prior art of Grasmeder *et al.* discloses high melt flow polypropylene homopolymer and propylene copolymer. Melt flow rates of inventive polymers lie in the range of 10-100 g/10 min (col. 2, line 67). The molecular weight distribution of polymers lies in the range of 1.2 to 3.0 (col. 3, line 7). Melting points of polypropylene homopolymer have an upper limit of 170 °C, while those of propylene copolymer have an upper limit of 160 °C (col. 3, lines 17 and 23). The comonomer content is 0.01 to 15 mole % (claim 1). The xylenes soluble content is less than 1.5 wt % (col. 3, line 33). Isotactic pentad content is in the range of 60-99 % (col. 3, line 30). The reference does not indicate the isotactic pentad/triad ratio, however, since the value of $[mm]$ for a given polymer is necessarily greater than that of $[mmmm]$, one of ordinary skill in the art would reasonably believe that the isotactic pentad/triad ratio for polymers exhibiting $[mmmm]$ on order of 99 % meets the limits set forth in the instant claims. The crystallinity of a polymer is a property that depends, in part, to the method by which is measured, and it is known that crystallization rate, *inter alia*, affects the degree of crystallinity (see Yamada *et al.*, col. 18, line 24). In view of the fact that melting points of polymers in Grasmeder *et al.* peak at 170 °C for homopolymer or 160 °C for copolymer, one of ordinary skill in the art reasonably infers that polymers of the invention exhibit a higher degree of crystallinity depending on the method of

Art Unit: 1796

crystallization. Since the PTO can not perform experiments, the burden is shifted to the Applicants to establish an unobviousness difference. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Grasmeder *et al.* teaches use of sorbitol based nucleating agent to induce crystallization of polypropylene resin, however, the amount of this material is not disclosed. Yamada *et al.* recommends incorporation of sorbitol nucleating agent in the range of 0.05-0.4 parts by weight (col. 13, line 18) during manufacture of molded articles containing polypropylene resin. Therefore, it would have been obvious to one having ordinary skill in the art to use 0.05-0.4 parts by weight of sorbitol containing nucleating agent, taught in Yamada *et al.*, in order to enhance crystallization of molded articles prepared with polypropylene resins of Grasmeder *et al.* The combination is obvious because Grasmeder *et al.* contemplates use of nucleating agent with no indication of amount, and Yamada *et al.* furnishes the otherwise obvious missing element.

Grasmeder *et al.* does not teach use of sodium 2,2'-methylenebis(4,6-di-*t*-butylphenyl)phosphate, however, Yamada *et al.* teaches that this compound and sorbitols are functionally equivalent nucleating agents (col. 12, lines 40-43). It would have been obvious to one having ordinary skill in the art, absent any showing of criticality or unexpected results, to use sodium 2,2'-methylenebis(4,6-di-*t*-butylphenyl)phosphate as nucleating agent in compositions of Grasmeder *et al.* with the reasonable expectation that functionally equivalent materials give rise to substantially similar and useful products.

Clearly the polymer compositions of Grasmeder *et al.* can be molded into a desired shape, and one would conclude that these compositions, which have been shown to be substantially the same as that recited in the instant claims, would exhibit the property of being capable of being manufactured into a blown film at the claimed rate measured in units of lb/hr-in. It follows that a one mil thick film would also exhibit the claimed film properties (clarity, haze, 1 % secant modulus, onset of crystallization, crystallization half-life, and magnitude of onset slope). Since the PTO does not have the means to prepare blown film and perform experiments, the burden is shifted to the Applicants to establish any unobviousness differences with respect to these conditional limitations.

Art Unit: 1796

24. Claims 27-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grasmeder *et al.* in view of Yamada *et al.*, and further in view of Herrington and Ogale.

Grasmeder *et al.* does not specify a particular end use for inventive polypropylene resins. At the time the instant invention was made, use of polypropylene and other polyolefin to make blown film was well-known in the art. Ogale teaches that polypropylene resins having good melt flow properties are well-suited for making one mil thick air quenched blown film (col. 9, line 10). The combination of references would have suggested to one having ordinary skill in the art that polypropylene compositions of Grasmeder *et al.*, which have good flow properties, are excellent starting materials for making blown film. Thus, it would have been obvious to one having ordinary skill in the art to make blown film from polypropylenes of Grasmeder *et al.*, and based on the excellent rheological and physical properties of these prior art polypropylenes, one having ordinary skill in the art would have expected to make dimensionally stable, strong and clear films with a high degree of success. One of ordinary skill in the art would have found it obvious to carry out a blown film process using the parameters set forth in Herrington, which teaches that blown film may be prepared at a reasonable rate of 2-50 lb/hr-in at a blow up ratio of about 1.5 to 5 (claim 2). Ogale also discloses preparation of polypropylene at a blow up ratio of 2.5 to 4.1 (col. 9, line 27). Preparation of multilayer film is also obvious over the combination of prior art. Ogale discloses various types of film are prepared by lamination or coextrusion techniques. Useful film materials include homopolymers and copolymers of ethylene or propylene, ethylene vinyl alcohol copolymers, and ethylene vinyl acetate copolymers (col. 13, lines 30-42). It would have been obvious to one having ordinary skill in the art to make a multilayered film in order to improve the mechanical properties of the product.

Art Unit: 1796

25. Claims 1-26 and 37-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugano *et al.* (U.S. 6,756,463) in view of Yamada *et al.*

Sugano *et al.* discloses high melt flow propylene polymer having a melt flow rates of 0.1-1000 g/10 min, an isotactic triad *[mm]* portion of 990 % or higher, a molecular weight distribution of 2-6, and xylenes soluble content that is related to melt flow rate (claims 1-12). From the working examples shown in Table 1, one finds that inventive polymers have a xylenes soluble content of less than 2 %. Melting points of propylene homopolymer are greater than 157 °C. The ethylene content, where present lies in the range of 0 to 7 wt %. The isotactic pentad content and isotactic pentad/triad ratio is not disclosed, however, since the value of *[mm]* for a given polymer is necessarily greater than that of *[mmmm]*, one of ordinary skill in the art would reasonably believe that polymers of the invention exhibit the claimed features. The crystallinity of a polymer is a property that depends, in part, to the method by which is measured, and it is known that crystallization rate, *inter alia*, affects the degree of crystallinity (see Yamada *et al.*, col. 18, line 24). In view of the fact that melting points of polymers in Sugano *et al.* are greater than 157 °C, one of ordinary skill in the art reasonably infers that polymers of the invention exhibit a higher degree of crystallinity depending on the method of crystallization. Since the PTO can not perform experiments, the burden is shifted to the Applicants to establish an unobviousness difference. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Sugano *et al.* does not teach use of nucleating agent to induce crystallization of polypropylene resin, however, this is well-known and conventional practice in the art. Indeed, Yamada *et al.* recommends incorporation of nucleating agent in the range of 0.05-0.4 parts by weight (col. 13, line 18), of sorbitol compounds and sodium 2,2'-methylenebis(4,6-di-*t*-butylphenyl)phosphate are exemplary (col. 12, lines 40-43), during manufacture of molded articles containing polypropylene resin. Therefore, it would have been obvious to one having ordinary skill in the art to use the amount of nucleating agent, taught in Yamada *et al.*, in order to enhance crystallization of molded articles prepared with polypropylene resins of Sugano *et al.*

Art Unit: 1796

Since this is well-established practice in the art, one of ordinary skill in the art would have expected such the combination to work with a high degree of success.

Clearly the polymer compositions of Sugano *et al.* can be molded into a desired shape, and one would conclude that these compositions, which have been shown to be substantially the same as that recited in the instant claims, would exhibit the property of being capable of being manufactured into a blown film at the claimed rate measured in units of lb/hr-in. It follows that a one mil thick film would also exhibit the claimed film properties (clarity, haze, 1 % secant modulus, onset of crystallization, crystallization half-life, and magnitude of onset slope). Since the PTO does not have the means to prepare blown film and perform experiments, the burden is shifted to the Applicants to establish any unobviousness differences with respect to these conditional limitations.

26. Claims 27-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugano *et al.* (U.S. 6,756,463) in view of Yamada *et al.*, and further in view of Herrington and Ogale.

Sugano *et al.* does not specify a particular end use for inventive polypropylene resins. At the time the instant invention was made, use of polypropylene and other polyolefin to make blown film was well-known in the art. Ogale teaches that polypropylene resins having good melt flow properties are well-suited for making one mil thick air quenched blown film (col. 9, line 10). The combination of references would have suggested to one having ordinary skill in the art that polypropylene compositions of Sugano *et al.*, which have good flow properties, are excellent starting materials for making blown film. Thus, it would have been obvious to one having ordinary skill in the art to make blown film from polypropylenes of Sugano *et al.*, and based on the excellent rheological and physical properties of these prior art polypropylenes, one having ordinary skill in the art would have expected to make dimensionally stable, strong and clear films with a high degree of success. One of ordinary skill in the art would have found it obvious to carry out a blown film process using the parameters set forth in Herrington, which teaches that blown film may be prepared at a reasonable rate of 2-50 lb/hr-in at a blow up ratio of about 1.5 to 5 (claim 2). Ogale also discloses preparation of polypropylene at a blow up ratio of 2.5 to 4.1 (col. 9, line 27). Preparation of multilayer film is also obvious over the combination of prior art.

Art Unit: 1796

Ogale discloses various types of film are prepared by lamination or coextrusion techniques. Useful film materials include homopolymers and copolymers of ethylene or propylene, ethylene vinyl alcohol copolymers, and ethylene vinyl acetate copolymers (col. 13, lines 30-42). It would have been obvious to one having ordinary skill in the art to make a multilayered film in order to improve the mechanical properties of the product.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rip A. Lee whose telephone number is (571)272-1104. The examiner can be reached on Monday through Friday from 9:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu S. Jagannathan, can be reached at (571)272-1119. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <<http://pair-direct.uspto.gov>>. Should you have questions on the access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

/Rip A. Lee/
Primary Examiner, Art Unit 1796

March 25, 2008